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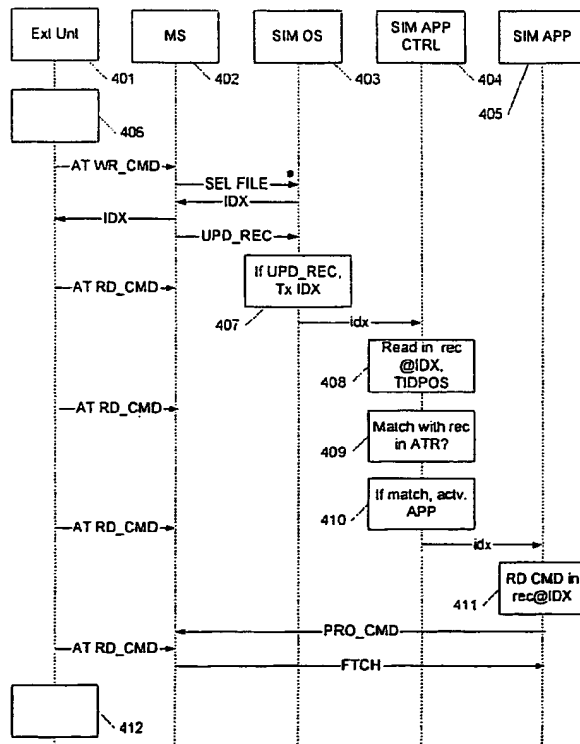
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(54) Title: **SUBSCRIBER IDENTIFY MODULE, METHOD OF AUTOMATICALLY ACTIVATING AN APPLICATION ON
SUCH A MODULE AND SYSTEM TO CARRY OUT SUCH A METHOD**

(57) Abstract: A Subscriber Identity Module (312) is provided for use in a mobile station (102; 306; 402), comprising an Operating System, a file system comprising a file (315; 502); and at least one application (317, 318, 319), which can be activated from an external device. The Subscriber Identity Module (312) further comprises an event listener (314) arranged to detect a storing of data in a file on the Subscriber Identity Module (312), and based on reading the data stored in the file (315; 502), determining which application (317, 318, 319) on the Subscriber Identity Module (312), if any, to activate. Moreover a method of activating an application (317, 318, 319) on a Subscriber Identity Module (312) for use in a mobile station (102; 306; 402) is provided, wherein the application (317, 318, 319) can be activated from an external device.

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Subscriber Identity Module, method of automatically activating an application on such a module and system to carry out such a method

Background

5 This invention relates to a Subscriber Identity Module for use in a mobile station, wherein the Subscriber Identity Module comprises an Operating System, a file system comprising a file; and at least one application which can be activated from an external
10 device; the invention further relates to a use of a Subscriber Identity Module in a mobile station. Finally, the invention relates to a method of activating an application on a Subscriber Identity Module for use in a mobile station, wherein the application can be activated
15 from an external device.

Today, mobile stations, typically known as mobile cellular telephones, are widespread and used all the time in everyday life. Since they comprise not only means for communicating with base stations that are arranged in a
20 cellular network, but also have complex processing power, an advanced man-machine interface, MMI, and near-range wireless communications means - and further are light in weight, they are well-suited platforms for various applications. Such applications can be involved in the
25 automation of the tasks with which a user is faced his/her mobile everyday life - for instance tasks such as payments, drawing a ticket, gaining access to a computer system or a building, etc. Typically, the application in the mobile station will interact wirelessly with some
30 type of external station.

Even though the mobile station may provide advanced features, a user will always require an easy and fast

interaction with the mobile station. Hence, in order to provide a successful application this must be accounted for in terms of response times and user interfaces requiring as few operations as possible.

5 To comply with the above requirement to a user interaction, an interesting option is to provide remote (i.e. from an external station) and automatic activation of an application on the mobile station. Hereto, experience has shown that typical response times over the
10 cellular network e.g. according to GSM or UMTS are too slow for real-time interaction with a program application. Consider for instance response times involved in sending/receiving a Short Message according to the GSM Short Message Service. Although it is a matter
15 of only a few seconds it is considered too slow, e.g. if the mobile station is used as a payment transaction unit. It should be noted that SMS messages are typically used to transfer short text messages between mobile stations.

In this context, the near-range, but wireless
20 communication capability is a cardinal point in obtaining a satisfactory solution additionally since, generally, a user expects a true wireless solution.

The near-range wireless communication is obtainable by means of infrared communications e.g. IrDa or RF
25 communications e.g. Bluetooth®. Thereby, local data transfer to and from an external unit is possible.

It should be noted that applications in a mobile station are often - and especially for the above-mentioned applications - embodied on a Subscriber Identity
30 Module, a so-called SIM card. This involves problems in that the communication between the mobile station and the

SIM is governed by standards given by the ETSI organisation.

A SIM card is essentially a single-chip computer with an Operating System, a file system, and at least one application. The main purpose of a SIM card is to provide a security module for customer authentication, which is owned and trusted by the network operator.

Prior art

10 US patent 5,887,266 discloses a method of using one or more applications on a SIM card in a mobile station. The application has a first and a second mode of operation. In the first mode the application is passive, but in the second mode the application controls a master control
15 unit of the mobile station. Switching between the first and second state can be accomplished by three different types of operation: 1) The so-called power-up type, whereby the application switches to the second mode of operation as soon as possible after the mobile station is
20 switched on and/or the module card is inserted, 2) The menu type, in which the user can select the application he wishes to be active, e.g. from a menu shown on the display of the mobile station, and 3) Automatic type, in which the application switches to a second mode of
25 operation when a certain condition, defined for the application has been satisfied. This automatic type of application can become active in the GSM system, when the mobile station receives a specific SMS message containing a so-called Hayes AT command. The US patent 5,887,266
30 states an example of the event code used, from which it appears that the AT commands used are of the following types: AT+CDIS, AT+CIND, and AT+CMGS. Also provided is a

system for making payments, comprising at least one mobile station which has an associated payment application, a component for using the application and a first transceiver (IR and/or RF) for providing local data transfer in conjunction with a cash register or the like
5 with a corresponding transceiver (IR respectively RF).

However, this prior art involves the problem that presently mobile stations are not supported to response to Hayes AT commands of the type AT+CMGS, which is a
10 command to send an SM point to point. It is questionable whether this command, which is normally used to send an SM from e.g. a personal computer application to a network, will be able to operate with mobile telephones, and at present vendors of standard mobile stations are
15 not supporting this type of command.

If the command AT+CMGS would work on a mobile station, this mobile station should inherently be featured to support such a command and it will thus be a command for direct activating an application on the SIM card. The US
20 patent 5,887,266 does not state any other means of activating automatic applications on the SIM card in case of lack of support of the used commands.

Additionally, it is a problem in the prior art that
25 the automatic type of operation, which as indicated above often appears to be the most sought-after, is restricted to be activated when and only when the mobile station receives a specific SMS (Short Message Services) message via the cellular communications system. Thereby, the
30 automatic type of operation can only be used (activated) through the GSM network. No automatic operation activated through a local link (e.g. IrDa) has been disclosed.

Neither do the GSM or ETSI specifications provide for such automatic activation.

Hence, providing both fast response time and automatic activation of an application in the mobile station is not
5 an option.

Summary of the invention

The above and other problems are solved when the Subscriber Identity Module mentioned in the opening
10 paragraph is characterized in further comprising an event listener arranged to detect a storing of data in a file on the Subscriber Identity Module, and based on reading the data stored in the file, determining which application on the Subscriber Identity Module, if any, to
15 activate.

Thereby, an application on the Subscriber Identity Module according to the invention can be activated automatically in a manner that is with certainty supported by mobile telephones presently on the market,
20 which telephones are typically using either the GSM, TDMA, or CDMA telephone technology. Moreover, the activation of the application on the Subscriber Identity Module is performed without user interaction and thereby provides a simple, fast and faultless manner of
25 interacting with external units.

Thus, an external unit can activate an application residing on the SIM over a near-range communications link. Thereby, it is possible to prompt a user of the mobile station to provide some information via the MMI of
30 the mobile station to an external unit, which in turn has initiated the prompting by activation of an application in the SIM. Alternatively, the external station can

obtain the information without prompting the user. Thereby, the user is relieved of the task of navigating through menus, which may require a lot of attention. This is especially expedient at a busy point-of-sale (PoS). In
5 other words, there is provided a solution where e.g. a cash register can write data, e.g. a payment order, to a specific SIM file, the phone book or the SMS file or another file. The SIM recognises a certain flow of events to thereby be able to trig a SIM application.

10

In a preferred embodiment, the detection of the storing of data is performed by detecting a write command to a file, wherein at said detection, an index becomes available; said detection results in reading of the data
15 stored in the file at the index; and the determining of which application to activate is performed by comparing data at the index with a specified data pattern. Hereby, the activation of an application on the Subscriber Identity Module is performed in a simple, fast and
20 faultless manner.

The detection of the storing of data can be performed by detecting from the mobile station to the SIM: a select file command and/or a seek/find a free index command and/or an update record command.

25

In yet a preferred embodiment the Subscriber Identity Module (312) comprises means for selecting a file in the Subscriber Identification Module; means for identifying an index at which data can be stored; and means for
30 storing data at a position indicated by the index. The file can be the Short Message file, a phone book file or

other file on the SIM. The index works as a pointer to the stored data.

In yet a preferred embodiment the Subscriber Identity
5 Module (312) further comprises means arranged for reading
an application ID from a predefined position in a record
that is identified by an index obtained in conjunction
with a storing; means for comparing the application ID
with a registered ID; and means for initialising an
10 application associated with the registered ID upon said
comparison of the application ID with the registered ID.
Preferably, the ID is registered in a file on the SIM. It
can be determined that the data were actually stored when
an index is received.

15

In another preferred embodiment the Subscriber
Identity Module (312) further comprises means for reading
a command at a position determined by the index from the
application associated with the registered ID. Thereby an
20 application can be activated with a specific command.

25

When the Subscriber Identity Module (312) further
comprises means for transmitting said index to an
external unit, data can be read from the external unit.

When the Subscriber Identity Module (312) further
comprises means for calculating a digital signature
identifying a user uniquely, the user can simply accept
to authenticate him/her when prompted by an automatically
30 activated application.

When the Subscriber Identity Module (312) further comprises means for writing an output from an application to a record at the same index, an external unit at a predefined location can find the output or result
5 generated by an activated application.

When the Subscriber Identity Module (312) further comprises a memory for registering the applications, it is possible to store a plurality of applications.

10

When the at least one application (317, 318, 319) in the Subscriber Identity Module (312) comprises a payment application for performing payment transactions, the Subscriber Identity Module can be used to perform payment
15 transactions.

The invention further relates to a method of activating an application (317, 318, 319) on a Subscriber Identity Module (312) for use in a mobile station (102; 306; 402), wherein the application (317, 318, 319) can be
20 activated from an external device; the method is characterized in comprising the steps of: detecting a storing of data in a file on the Subscriber Identity Module (312), which storing of data can be caused by the
25 external device; reading the data stored in the file; and if the data stored in the file match a specified data pattern, activating an application on the Subscriber Identity Module (312).

Thereby, an external unit can activate an application
30 residing on the SIM (312) over a near-range communications link, rendering it possible to prompt a user of the mobile station to provide some information

via the MMI of the mobile station to an external unit, which in turn has initiated the prompting by activation of an application in the SIM.

5 According to a preferred embodiment, detecting of the storing of data is performed by detecting a write command to a file, wherein at said detecting, an index becomes available; and wherein said detection results in reading of the data stored in the file at the index; and wherein
10 the determining of which application to activate is performed by comparing data at the index with a specified data pattern. Hereby, the activating of an application on the Subscriber Identity Module is performed in a simple, fast and faultless manner.

15

 In a preferred embodiment of the method the data to be stored are received in a mobile station (102; 306; 402) by means of a modem (308), via a data port (307) that is arranged to provide local data transfer. The
20 modem (308) can be embodied in the mobile station (102; 306; 402) either as hardware or as software.

 When the data to be stored are received in a mobile station (102; 306; 402) via so-called AT commands to the
25 modem (308) well known communications mechanisms can be used in communicating with external units.

 In a preferred embodiment of the method according to the invention the AT commands is an AT command arranged
30 to Write Message to Memory. This could for example be of the AT-CMGW type.

When the method comprises the step of converting the AT commands to ETSI commands that request data storage on the Subscriber Identification Module, access from an external unit to the SIM is provided.

5

The method can comprise the step of issuing a command to the mobile station (102; 306; 402). Thereby an activated application can issue a proactive command of displaying, playing sound, etc. This can be used for e.g. attracting a user's attention.

10

Additionally, the method can comprise the steps of, from an external unit: transmitting a write command of starting an application to the mobile station (102; 306; 402); and polling the mobile station (102; 306; 402) with a read command to receive an output generated as a consequence of starting the application.

15

Throughout this description, the term "event listener" indicates a specific portion CP of the SIM Operating System. The event listener is arranged, in accordance with the invention, to register a writing operation to a file and subsequently to forward an index that points to a record in the file to a SIM application controller. It should be noted that the event listener could also be a separate unit connected to the SIM Operating System.

25

Moreover, the term "local data transfer" is meant to be opposed to a data transfer performed over a radio communications network by means of satellites and by use of radio connections or over a computer network. In local

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data transfer, the units typically communicate directly with each other without intermediate equipment. Typically the units performing the local data transfer are at a distance from each other of between about 40 cm to about 5 1 m; in some cases, though, the units performing the local data transfer are up to about 10 m from each other. However, the term "local data transfer" is not meant to limit the distance between the units communicating, rather, it is conceivable that the units could be at 10 other distances from each other. The local data transfer could for instance be performed by means of Infrared signals (IR signals) or Bluetooth® signals.

Further preferred embodiments of the method according to the invention are stated in the other dependent 15 claims. Moreover, the invention relates to the use of a Subscriber Identity Module in a mobile station (102; 306; 402) and a system.

20 Brief description of the drawings

The invention will be explained more fully below in connection with a preferred embodiment and with reference to the drawing, in which:

fig. 1 shows a block diagram of a mobile station in 25 communication with a cash terminal via a local data link;

fig. 2 shows a block diagram of a mobile station in communication with a server via cellular communications system;

fig. 3 shows a block diagram of a terminal and a 30 mobile station 306 with a subscriber identity module 315 according to the invention;

fig. 4 shows a combined sequence diagram and flowchart; and

fig. 5 shows a combined block diagram and flowchart.

5 Description of a preferred embodiment

Fig. 1 shows a block diagram of a mobile station 102 in communication with a terminal via a local data link. According to the invention, the terminal TRM 101 is able to activate an application in the mobile station 102 via
10 the local data link, LCO_DL.

In a preferred embodiment, the terminal is comprised of a cash register CR 104 and a so-called pay-box PB 103.

The cash register 104 can be a common cash register with means for communicating with the pay-box e.g. via a
15 RS-232 protocol. The cash register can communicate e.g. an amount payable to the pay-box. Subsequently, and according to a scheme to be explained further below, the pay-box can return a message indicating whether a transaction has been approved.

20 The pay-box 103 is arranged to provide the communication with the mobile station 102 via the local data link LCO_DL and optionally to provide communication via a channel on a communications network 105, preferably the Internet, to a payment clearance centre. The payment
25 clearance centre can be interfaced to the Internet via a WEB or bank server coupled to a Bank's Mainframe server 107.

The local data link LCO_DL is preferably in accordance with the IrDA or Bluetooth standard. Since, according to
30 the invention commands to the mobile station 102 can be forwarded to activate an application on a Subscriber Identity Module in the mobile station, user interactions

with the mobile station can be accomplished for in a fast and smooth way.

It should be noted that the boxes SD 100 and BD 108 enclose the equipment used at e.g. a shop's domain and a Bank's domain, respectively.

Fig. 2 shows a block diagram of a mobile station 102 in communication with a server via a cellular communications system. It is shown that the mobile station 102 can be used in a cellular communications system e.g. the GSM or UMTS system. This cellular communications system, comprising operator's equipment 203 and 204, can also provide communication between the mobile station and the bank. However, this is not a part of the present invention.

It is also shown that the WEB server 106 in addition to the communication with the pay-box 103 can be used to provide a home-banking application.

Fig. 3 shows a block diagram of a terminal and a mobile station with a subscriber identity module according to the invention. The mobile station MS 306 and the terminal CR 301 can be considered as being known to a person skilled in the art. However, for the sake of completeness and in order to operate in conjunction with the present invention, the terminal must comprise a data port 302 providing local communication with the mobile station 306. A preferred data port could be a port in accordance with the IrDa or Bluetooth® standard. Moreover, the terminal comprises a main processing unit CP 303, a network port providing communication over a

data network e.g. the Internet, and a man-machine interface MMI 304.

Correspondingly, in order to operate in conjunction with the present invention, the mobile station MS 306 must comprise a data port 307 providing local communication with the terminal. Moreover, the mobile station 306 comprises a modem 308, a master control unit 309, a man-machine interface 311, and RF cellular communications means 310 e.g. in accordance with the GSM or UMTS system.

The mobile station 306 can accommodate a subscriber identity module, SIM 312, communicating with the mobile station over an interface.

In the mobile station 306, the modem 308 operates in combination with the data port 307 to transmit and receive so-called Hayes AT commands ATC by means of which the mobile station and the terminal communicate. The AT commands are terminated in the modem and at least a subset of the AT commands are converted to ETSI 11.11 and 11.14 commands that enables writing over the MS/SIM interface for writing to files SIM MEM 315, 502 on the SIM card. Such a file can be the so-called Short Message SM file.

25

Writing, reading and other basic functions are executed by an Operating System SIM OS 313 on the SIM 312. A specific portion CP 314, a so-called event listener, of the SIM OS 313 is arranged, in accordance with the invention, to register a writing operation to a file (e.g. the SM file) and subsequently, to forward an index that points to a record in the file to a SIM

application controller SIM APP CTRL 320. Thereby, it is, based on reading the data stored in the file, determined which application on the Subscriber Identity Module, if any, should be activated.

5 Based on the index, the SIM application controller 320 examines the record to find a pointer in an Application Trigger Registry ATR 316 pointing to an application App #1 317; App #2 318; App #3 319 to activate. Please note that when only one out of one application can be
10 activated from an external unit, the Application Trigger Registry 316 can be constituted by a single entry.

Fig. 4 shows a first combined sequence diagram and flow chart. Generally, the punctuated lines designate
15 time lines for respective units designated with reference numerals 401 to 405. The lines extending perpendicular to the time lines designate exchange of information between any two units 401 to 405. The boxes located on a time line of a unit designate a processing step in the unit.

20 The units involved are an external unit, which can request execution of an application on the SIM card; a mobile station MS 402; a SIM Operating System SIM OS 403; a SIM Application Controller SIM APP CTRL 404; and a SIM Application SIM APP 405.

25 The external unit 401 initiates activation of an application on the SIM by transmitting a message comprising a command to the application and an Application Trigger Identifier ATI, at a predetermined position in the message. Said ATI determining which
30 application to activate.

Upon request from the external unit 401 an AT write command AT WR_CMD is transmitted via a data port to a

modem in the mobile station 402. Subsequently, the mobile station 402 selects a file on the SIM via the SIM Operating System. In response thereto the SIM OS returns an index to a record that is free. The mobile station
5 will return that index IDX to the external unit for subsequent use. When the index is returned, data received with the AT write command will be written to the free record by means of an update record command UPD_REC.

In step 407 it is tested whether this write command is
10 carried out successfully, and in the affirmative, the index IDX will be forwarded from the SIM OS to the SIM Application Controller. The message send from the external terminal is thus stored in the record.

In step 408, the SIM Application Controller receives
15 the index and reads the record identified by the index at a predefined position TIDPOS in the record at which the Application Trigger Identifier ATI resides.

In step 409, it is verified whether the ATI exists in an Application Trigger Register ATR. If it exists, an
20 associated application (see reference numerals 317 to 319) on the SIM is activated and the index IDX is forwarded to the activated application. The activated application reads the record at the index in step 411 RD
CMD in rec@IDX to examine whether there are any commands
25 to execute. Such a command can be a command to the mobile station by means of the MMI displaying text/images, playing a sound, etc.

In response thereto the mobile station can fetch data (FTCH) from the application. Hence, the SIM application
30 is in command by telling the mobile station what to do by means of the FTCH command.

While the above-mentioned processing is carried out in the mobile station and on the SIM, the external unit 401 can poll the mobile station 402 for data provided as a result of activating a specified application. The polling
5 can be carried out by means of AT read commands (AT RD_CMD). The AT read command specifies the location to read at by means of the index IDX received as a response to the AT write command (AT WR_CMD).

In step 412 the external unit has received a response
10 obtained by activating an application on the SIM.

In a preferred embodiment, the file on the SIM is the Short Message (SM) file.

In case the mobile station 402 is used for taking part
15 in a Mobile Payment Service MPS in conjunction with a cash register as the external unit 401, an example of the possible steps performed is given below:

First, the cash register sends a request "Sign payment" to the mobile station using a Write Message to
20 Memory command, typically an AT+CMGW command. Thereafter, the mobile station selects the SM file, finds the next free index and updates the record. The SIM Operating System 403 searches the record for a specific data pattern. If the data pattern is found, then the SIM
25 Operating System activates SIM application performing the Mobile Payment Service, the so-called MPS SIM application. The MPS SIM application returns a signal (for instance "91XX") to the mobile telephone to indicate that the mobile station has more commands to be executed.
30 The mobile telephone thereafter returns the index of an SM file to the cash register, where the SM was written as a response to the AT command. Finally, the mobile

telephone fetches the other commands from the MPS SIM application for the MMI interaction and the MPS SIM application calculates a signature and writes the result to the same index in the SM file.

5

Fig. 5 shows a combined block diagram and flowchart. A memory MEM 501 on the SIM comprises a SM file 502, which is known to a person skilled in the art, and an Application Trigger Registry 504.

10 The SM file 502 comprises records each of which is commonly used to store a Short Message. Such a Short Message may be delivered via the local data port to the modem and further on to the SM file as described in the above. According to the invention a Short Message can
15 comprise a command CMD and a trigger ID TID, which command is to be interpreted by an activated application specified by the trigger ID, TID. The above-mentioned index which is received from the SIM OS is used as a pointer to the record, whereas the position in the record
20 at which the trigger ID TID can be found, can be stored on the SIM as a pre-defined position TIDPOS. Hence, with the knowledge of the pre-defined position, an external unit can write the ID of an application to be activated.

The Application Trigger Registry 604 comprises a list
25 of records with ID's of applications, which can be activated by an external unit. The ID's may themselves comprise information which can be used to activate a corresponding application or, alternatively, the ID's can be linked to such information.

30 Turning now to a description of the processing on the SM file and the Application Trigger Registry.

In step 505 and upon an event of receiving the above mentioned index IDX from the SIM OS, in a process according to the invention, the TID is read from the record identified by the index IDX at the pre-defined position TIDPOS in the record. In step 506, which can be carried out by a search engine, this TID is searched for in the ATR 504. If a match is found, step 507 will forward processing to step 609 in which the application with the found TID is activated. Alternatively, if no match is found, processing will be forwarded to step 508, in which an index from the SIM OS will be waited for. The latter scenario will happen when an ordinary SMS message is received.

Generally, it should be noted that no particular distinction is made between the term "Mobile Station MS" that typically designates "Mobile Equipment ME and SIM", whereas, typically, the term "Mobile Equipment" does not include the SIM. Additionally, no specific distinction is made between the terms mobile cellular telephone, mobile station, mobile telephone, mobile phone, mobile terminal, mobile radio communications unit, mobile communications unit, cellular phone or mobile.

Moreover, the pay-box may also be denoted a payment terminal.

Finally, it should be stressed that the invention is not limited to a mobile telephone, inasmuch as it might as well be used in any mobile equipment containing a SIM card and cellular communications means, e.g. a PDA with cellular communications means.

Applications:

The terminal can be a cash terminal, a cash register, a ticket-issuing machine, an information stand or desk, an access controller etc.

Patent Claims

1. A Subscriber Identity Module (312) for use in a mobile station, wherein the Subscriber Identity Module
5 comprises:

a file (315; 502); and

at least one application (317, 318, 319), which can be activated from an external device;

characterized in that the Subscriber Identity Module
10 (312) comprises:

an event listener (314) arranged to detect a storing of data in a file on the Subscriber Identity Module (312), and based on reading the data stored in the file, determining which application (317, 318, 319) on the
15 Subscriber Identity Module (312), if any, to activate.

2. A Subscriber Identity Module (312) according to claim 1, wherein detection of the storing of data is performed by detecting a write command to a file, wherein
20 at said detection, an index becomes available; and wherein said detection results in reading of the data stored in the file at the index; and wherein the determining of which application to activate is performed by comparing data at the index with a specified data
25 pattern.

3. A Subscriber Identity Module (312) according to claim 1 or 2, further comprising:

means for selecting a file (315; 502) in the
30 Subscriber Identification Module (312);

means for identifying an index at which data can be stored; and

means for storing data at a position indicated by the index.

4. A Subscriber Identity Module (312) according to
5 any of the claims 1 to 3, further comprising:

means arranged for reading an application ID from a predefined position in a record that is identified by an index obtained in conjunction with a storing;

means for comparing the application ID to a
10 registered ID; and

means for initialising an application associated with the registered ID upon said comparison of the application ID with the registered ID.

15 5. A Subscriber Identity Module (312) according to any of the claims 1 to 4, further comprising:

means for reading a command at a position determined by the index from the application associated with the registered ID.

20

6. A Subscriber Identity Module (312) according to any of the claims 1 to 5, further comprising:

means for transmitting said index to an external unit.

25

7. A Subscriber Identity Module (312) according to any of the claims 1 to 6, further comprising:

means for calculating a digital signature identifying a user uniquely.

30

8. A Subscriber Identity Module (312) according to any of the claims 1 to 7, further comprising:

means for writing an output from an application to a record at the same index.

9. A Subscriber Identity Module (312) according to
5 any of the claims 1 to 8, further comprising a memory for registering the applications.

10. A Subscriber Identity Module (312) according to
any of the claims 1 to 9, wherein the at least one
10 application (317, 318, 319) comprises a payment application for performing payment transactions.

11. Use of a Subscriber Identity Module (312)
according to any of the claims 1 to 9 in a mobile station
15 (102; 306; 402).

12. A method of activating an application (317, 318,
319), on a Subscriber Identity Module (312) for use in a
mobile station (102; 306; 402), wherein the application
20 (317, 318, 319) can be activated from an external device;
the method is characterized in comprising the steps of:

detecting a storing of data in a file on the
Subscriber Identity Module (312), which storing of data
can be caused by the external device;

25 reading the data stored in the file;

if the data stored in the file match a specified data
pattern, activating an application on the Subscriber
Identity Module (312).

30 13. A method according to claim 12, wherein detecting
of the storing of data is performed by detecting a write
command to a file, wherein at said detecting, an index

becomes available; and wherein said detection results in reading of the data stored in the file at the index; and wherein the determining of which application to activate is performed by comparing data at the index to a
5 specified data pattern.

14. A method according to claim 12 or 13, wherein the data to be stored are received in a mobile station (102; 306; 402) by means of a modem (308), via a data port
10 (307) that is arranged to provide local data transfer.

15. A method according to claim 14, wherein the data to be stored are received in a mobile station via so-called AT commands to the modem (307).
15

16. A method according to claim 15, wherein the AT commands is an AT command arranged to Write Message to Memory.

20 17. A method according to any of the claims 14 to 16 further comprising the step of: converting the AT commands to ETSI commands that request data storage on the Subscriber Identification Module (312).

25 18. A method according to any of claims 12 to 17 comprising the steps of:

selecting a file in the Subscriber Identification Module (312);

30 identifying an index at which data can be stored; and storing data at a position indicated by the index.

19. A method according to any of claims 12 to 18 comprising the steps of:

if storing of data was actually carried out, reading an application ID from a predefined position in a record
5 that is identified by an index obtained in conjunction with the storing; and

if the application ID matches a registered ID, starting an application associated with the registered ID.

10

20. A method according to claim 19 comprising the step of: from the application associated with the registered ID, reading a command at a position determined by the index.

15

21. A method according to claim 20 comprising the step of: issuing a command to the mobile station (102; 306; 402).

20

22. A method according to claim 21 comprising the step of, from an external unit:

transmitting a write command of starting an application to the mobile station (102; 306; 402); and

polling the mobile station (102; 306; 402) with a
25 read command to receive an output generated as a consequence of starting the application.

23. A method according to any of claims 17 to 22 comprising the step of: transmitting the index to an
30 external unit.

24. A method according to any of claims 12 to 23 comprising the step of calculating a digital signature identifying a user uniquely.

5 25. A method according to any of claims 17 to 24 comprising the step of: writing an output from an application to a record at the same index.

26. A system comprising:
10 a mobile station 102; 306; 402) with a Subscriber Identity Module (312) and a communication port (307) arranged to provide local data transfer;
 an external unit arranged to communicate with the mobile station via a local data port (302);
15 characterized in that
 the system is arranged to carry out the method as set forth in any of claims 12 to 23.

27. A system according to claim 26, wherein the local
20 data port (302) is of the IR type.

28. A system according to claim 26, wherein the local
data (302) port is of the Bluetooth © type.

25

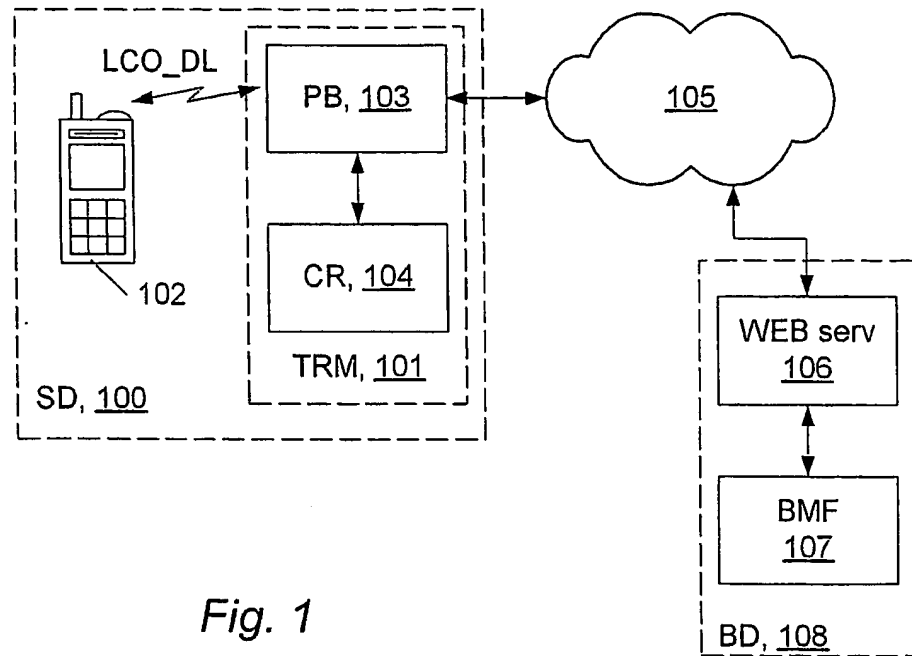


Fig. 1

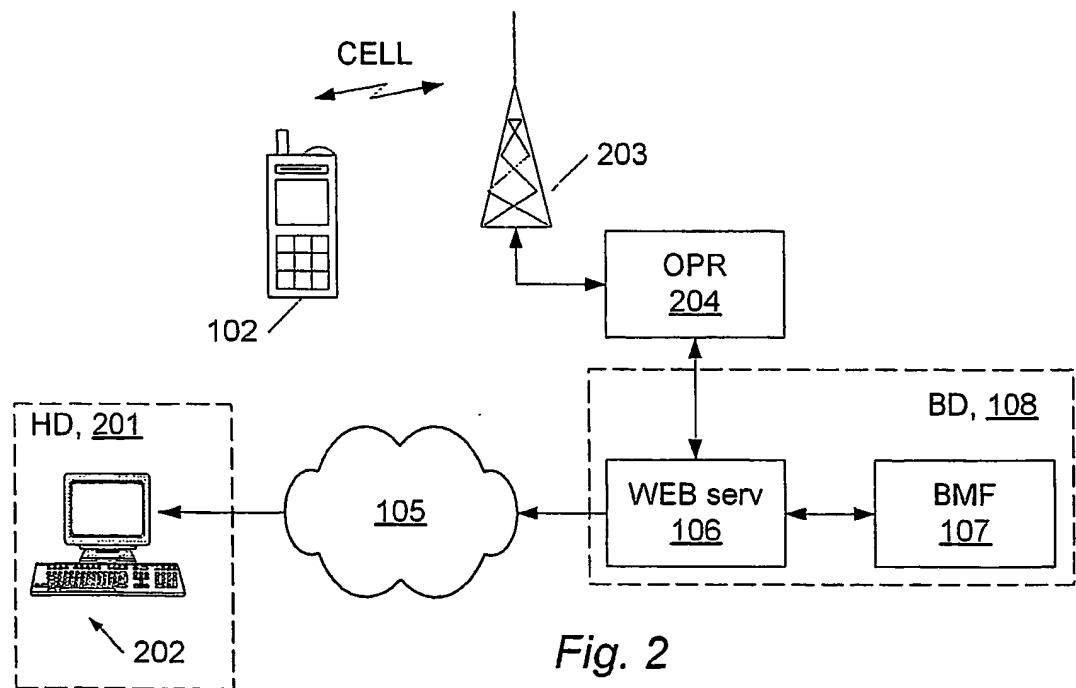


Fig. 2

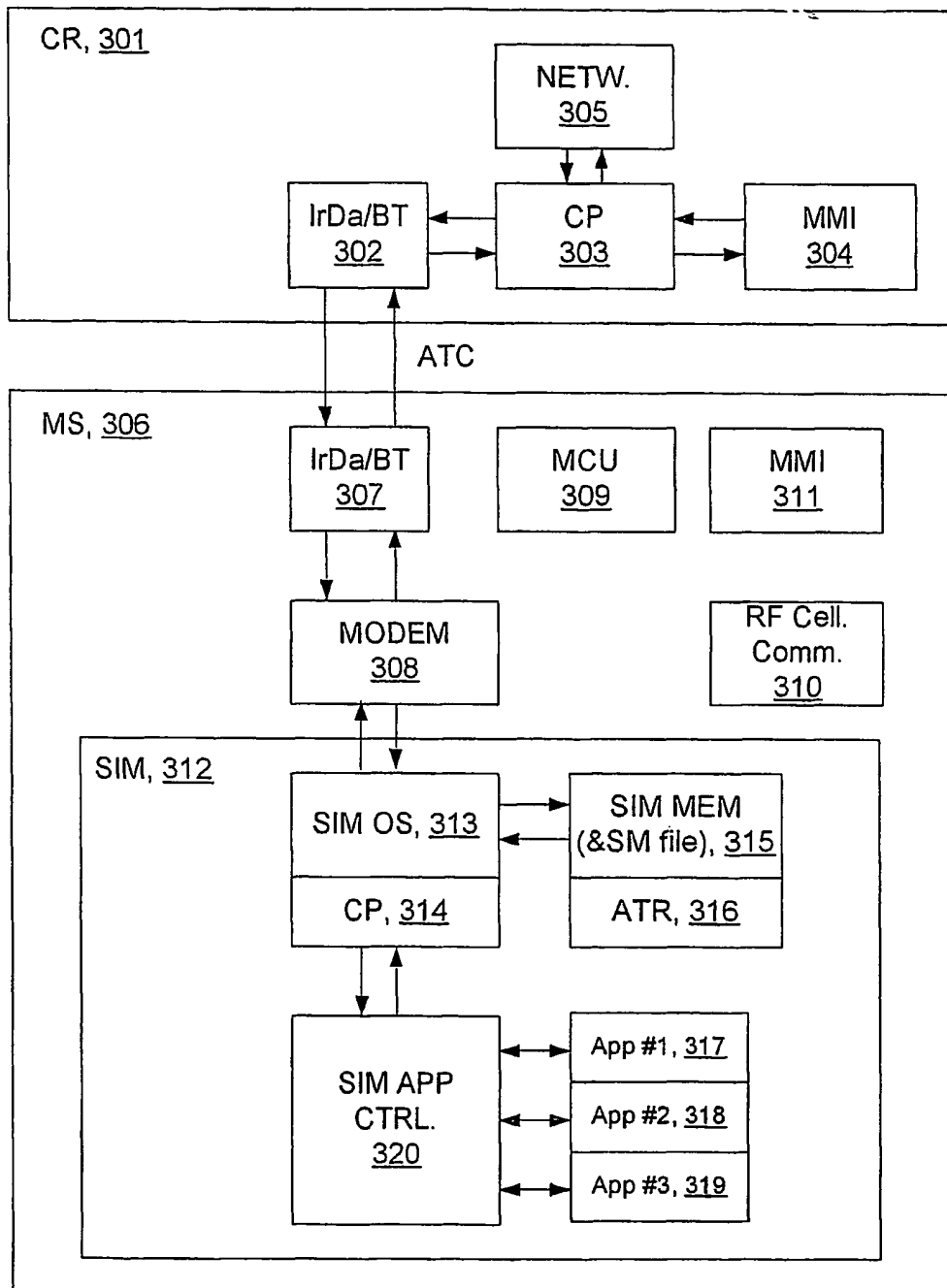


Fig. 3

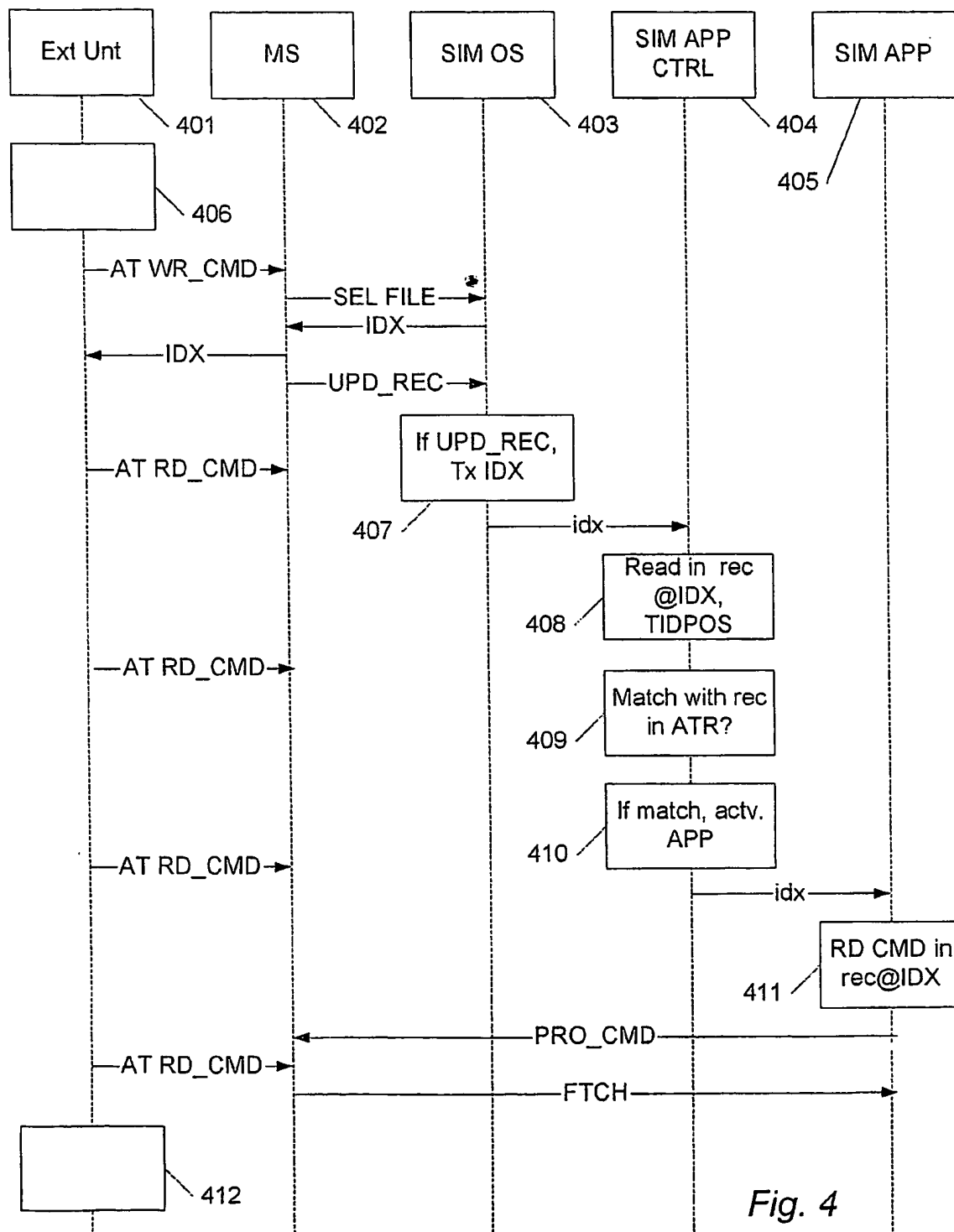


Fig. 4

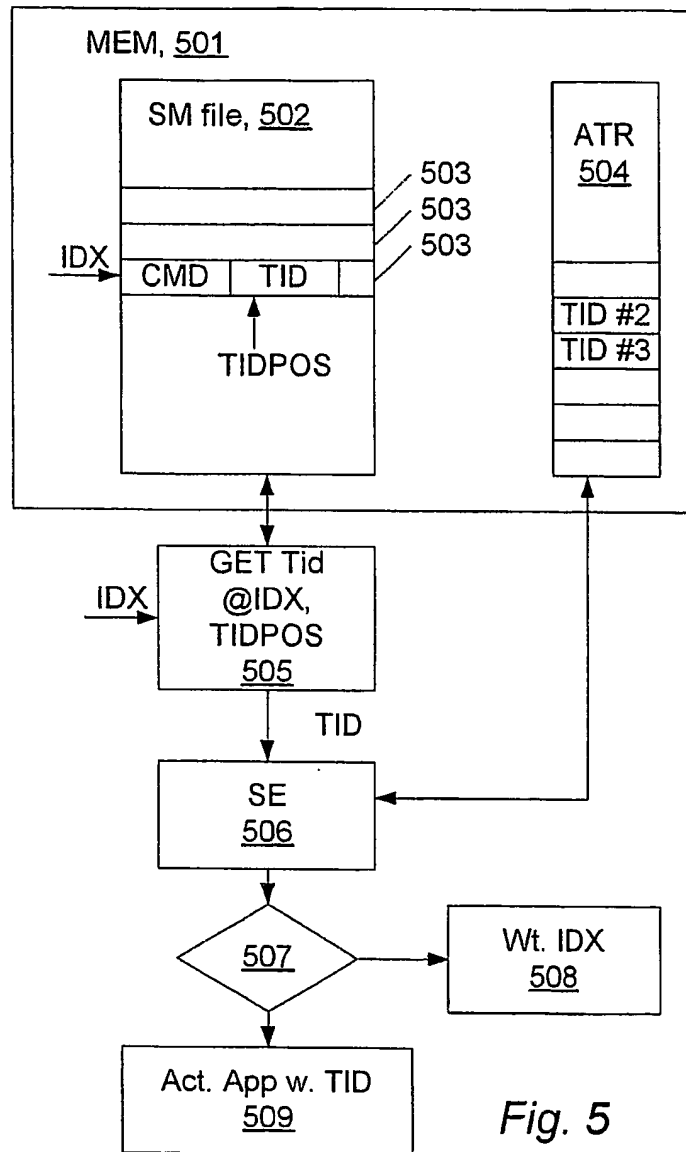


Fig. 5

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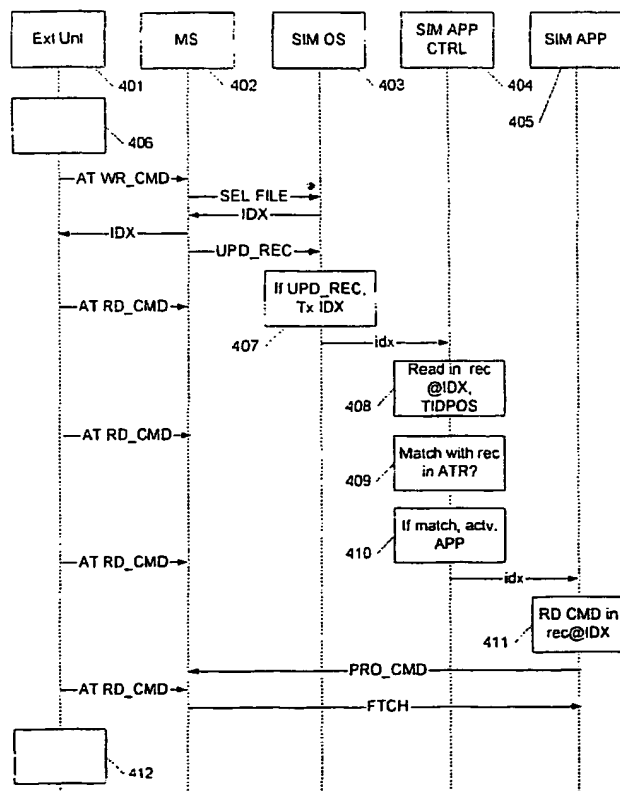
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(54) Title: **SUBSCRIBER IDENTIFY MODULE, METHOD OF AUTOMATICALLY ACTIVATING AN APPLICATION ON
SUCH A MODULE AND SYSTEM TO CARRY OUT SUCH A METHOD**



(57) Abstract: A Subscriber Identity Module (312) is provided for use in a mobile station (102; 306; 402), comprising an Operating System, a file system comprising a file (315; 502); and at least one application (317, 318, 319), which can be activated from an external device. The Subscriber Identity Module (312) further comprises an event listener (314) arranged to detect a storing of data in a file on the Subscriber Identity Module (312), and based on reading the data stored in the file (315; 502), determining which application (317, 318, 319) on the Subscriber Identity Module (312), if any, to activate. Moreover a method of activating an application (317, 318, 319) on a Subscriber Identity Module (312) for use in a mobile station (102; 306; 402) is provided, wherein the application (317, 318, 319) can be activated from an external device.

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EPO-Internal, WPI Data

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